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(71) Applicant: Sharp Corp

(72) Inventor: KATOU, Chieji

(72) Inventor: SHIRAISHI, Naoki

(72) Inventor: HANEDA, Isamu

10 (72) Inventor: MORITA, Akitaka

(72) Inventor: IIDA, Mami

(72) Inventor: TANAKA, Yasuharu

(72) Inventor: MATSUDA, Shingemutsu

(72) Inventor: TAKENAKA, Toshihiro

15 =====

[Title of the Invention]

Data transfer device

[Abstract]

20 [Object]

It is enabled to transfer data in an arranged state when applications transfer data for each item to each other.

[Constitution]

25 The device comprises means for comparing an item name in a transferring source application and an item name in a transferring destination application to

determine their matching or resemblance, the device being provided with: (1) means for, if an item name of data for each item to be transferred does not match any item name in the transferring destination application, 5 transferring the data for each item to an item field having a name resembling the item name; (2) means for, if an item name of the data for each item to be transferred matches an item name in the transferring destination application, transferring the data for each 10 item to an item field having a name matching the item name; and (3) means for, if an item name in the transferring destination application does not match any item name in the transferring source application, writing information indicating "no data" into the item 15 name in the transferring destination application.

[Claims for the Patent]

[Claim 1]

A data transfer device comprising multiple kinds of applications including data for each item such as a name or a telephone number, and transferring data for each item included in one of said applications to item fields in another application, the device being characterized by being provided with: means for comparing an item name included in a transferring source application and an item name included in a transferring destination application to determine matching or resemblance of the item names; and means for, if an item name of the data for each item to be transferred does not match any item name in the transferring destination application, transferring the data for each item to an item field having a name resembling the item name.

[Claim 2]

A data transfer device comprising multiple kinds of applications including data for each item such as a name or a telephone number, and transferring data for each item included in one of said applications to item fields in another application, the device being characterized by being provided with: means for comparing an item name included in a transferring source application and an item name included in a transferring destination application to determine

matching or resemblance of the item names; and means
for, if an item name of the data for each item to be
transferred matches an item name in the transferring
destination application, transferring the data for each
5 item to an item field having the name matching the item
name.

[Claim 3]

A data transfer device comprising multiple kinds
of applications including data for each item such as a
10 name or a telephone number, and transferring data for
each item included in one of said applications to item
fields in another application, the device being
characterized by being provided with: means for
comparing an item name included in a transferring
15 source application and an item name included in a
transferring destination application to determine
matching or resemblance of the item names; and means
for, if an item name in the transferring destination
application does not match any item name in the
20 transferring source application, writing information
indicating "no data" to the item name in the
transferring destination application.

[Detailed Description of the Invention]

25 [0001]

[Industrial Application Field]

The present invention relates to an improved data transfer device for processing data transfer between multiple kinds of applications in an information terminal machine comprising the applications including
5 data for each item such as a name and a telephone number.

[0002]

[Conventional Art]

An information terminal machine such as an
10 electronic notebook stores many kinds of data for multiple kinds of applications in a classified state. Each of the applications can store some data for each item such as a name and a telephone number, although each of the applications includes a different number of
15 items and different item names (kinds of the items). Conventionally, an electronic notebook comprises a data transfer device for each application to transfer data (data for each item) to another application. For example, data is transferred from a name card control
20 to a telephone book, thereby saving the effort of data input.

[0003]

[Problems to be Solved by the Invention]

However, when the conventional data transfer
25 device transfers data for each item, an item name in a transferring source application may not correspond to any item name in a transferring destination application.

In that case, the transferred data must be stored in an empty space in the transferring destination application, which requires rearrangement of data in the transfer destination.

5 [0004]

An object of the present invention is to provide a data transfer device that can transfer data in an arranged state when applications transfer data for each item to each other.

10 [0005]

[Means for Solving the Problems]

The invention according to claim 1 of this application is a data transfer device comprising multiple kinds of applications including data for each
15 item such as a name or a telephone number, and transferring data for each item included in one of the applications to item fields in another application, the device being characterized by being provided with:
means for comparing an item name included in a
20 transferring source application and an item name included in a transferring destination application to determine matching or resemblance of the item names;
and means for, if an item name of the data for each item to be transferred does not match any item name in
25 the transferring destination application, transferring the data for each item to an item field having a name resembling the item name.

[0006]

The invention according to claim 2 of this application is a data transfer device comprising multiple kinds of applications including data for each
5 item such as a name or a telephone number, and transferring data for each item included in one of the applications to item fields in another application, the device being characterized by being provided with:
means for comparing an item name included in a
10 transferring source application and an item name included in a transferring destination application to determine matching or resemblance of the item names;
and means for, if an item name of the data for each item to be transferred matches an item name in the
15 transferring destination application, transferring the data for each item to an item field having the name matching the item name.

[0007]

The invention according to claim 3 of this
20 application is a data transfer device comprising multiple kinds of applications including data for each item such as a name or a telephone number, and transferring data for each item included in one of the applications to item fields in another application, the
25 device being characterized by being provided with:
means for comparing an item name included in a transferring source application and an item name

included in a transferring destination application to determine matching or resemblance of the item names; and means for, if an item name in the transferring destination application does not match any item name in
5 the transferring source application, writing information indicating "no data" to the item name in the transferring destination application.

[0008]

[Operation]

10 With the invention according to claim 1 of this application, if one application transfers data for each item which the application includes to another application and an item name of the data for each item to be transferred does not match any item name in the
15 transferring destination application, then the data is transferred to a field having a resembling item name. The comparison of item names to determine matching or resemblance can be accomplished by previously attaching a code to each item name and comparing such codes.

20 [0009]

With the invention according to claim 2, similarly to the invention according to claim 1, an item name of transferred data is compared with an item name in the transferring destination application when the
25 applications transfer data for each item to each other. If an item name exists in the transferring destination application which matches the item name of the

transferred data, data in a field having the item name is transferred.

[0010]

Moreover, with the invention according to claim 3,
5 if an item name exists in the transfer destination and does not exist in the transfer source, "no data" is written into an item name in the transfer destination.

[0011]

[Embodiments]

10 Figure 1 is a block diagram of an electronic notebook comprising a data transfer device. A CPU 1 controls an entire electronic notebook. The CPU 1 controls the operation according to a program stored in a ROM 2. In the control, a RAM 3 is used as a data
15 storage area and a work area. The CPU 1 connects to a keyboard 5 or other input/output devices via an I/O 4. Data inputted from the keyboard 5 or the like is stored in the RAM 3 and displayed on a display element 6 as necessary. The display element 6 can be typically LCD
20 display equipment. Content written in a display memory 7 is displayed on the display element 6.

[0012]

Figures 2 to 5 are drawings showing application examples of the electronic notebook. Figure 2 shows a
25 telephone book application, Figure 3 shows a name card application, Figure 4 shows a scheduling application, and Figure 5 shows a note application. Each of the

applications includes fields of an item name, item symbols and an item character string. The telephone book application (Figure 2) is described herein in detail taking it as an example. The telephone book application includes six item names of a name, pronunciation of name, ..., remarks. Each of the item names corresponds to item symbols, in which three to five upper characters are symbols corresponding to the item name, while two lower characters (two characters following a dot) are symbols indicating an attribute of the item. The attribute symbols consisting of the two lower characters are used to determine matching with or resemblance to an item name of another application. The attribute symbols consist of a symbol indicating the kind of an item and a number indicating classification of the kind. For example, in a telephone number, "C" indicates the kind of the item, while "1" indicates classification of the kind. The attribute symbols are common in different applications: for example, for the name card application (Figure 3), attribute symbols of a telephone number are also "C1". A FAX number, which resembles to a telephone number, is labeled as "C2" in which the kind of it is same as but differs in a classification number from a telephone number. In this way, matching, resemblance, or mismatching of an item name can be determined depending on two lower characters of the item symbol. The

applications in Figures 2 to 5 have the common item names as follows:

(1) "name" in the telephone book and "full name" in the name card control: A1

5 (2) "pronunciation of name" in the telephone book and "pronunciation of full name" in the name card control: B1

(3) "remarks" in the telephone book, "remarks" in the name card control, "content" in the scheduling and
10 "content" in the note: X1

Similar items are as follows:

[0013]

(1) "telephone number" in the telephone book and "FAX number" in the name card control: C

15 (2) "address" in the telephone book and "company name", "department" and "title" in the name card control: E

When the applications transfer item data to each other, its item is compared with such common items and resembling items for the data transfer to any of the
20 common items or resembling items. In the above, "X" is a symbol indicating other items. If a transfer destination does not contain an appropriate item name, data is transferred to an "X" field.

[0014]

25 Data corresponding to each item name, i.e. a name, pronunciation of name and the like, is stored in an item character string. To an item character string,

the data, a code "OFF_H" indicating "no data", a code "00_H" indicating the end of data for the item, a line feed code and the like are written in. The codes serve to recognize the presence of data, the end of data or
5 the like.

[0015]

Figures 6 to 8 are drawings showing data transfer examples. Figure 6 shows a transfer example from the name card control to the telephone book, in which data
10 for each item in the name card control is transferred to a field of the same item or similar item in the telephone book. The "pronunciation of company name", which the transfer source contains but the transfer destination does not contain an item same as or similar
15 to, is transferred to a remarks field. Figure 7 shows a transfer example from the telephone book to the note. As in the drawing, no item name in the note application corresponds to item names in the telephone book so that all the item data is transferred to note content.
20 Figure 8 shows a transfer example from the telephone book to the name card control. As in the drawing, all the item data in the telephone book is transferred to corresponding item name fields in the name card control. The name card control application comprises many item
25 name fields not contained in the telephone book being the transfer source (for example, a FAX number or a

company name). For those items, character strings indicating no data are stored.

[0016]

Figure 9 is a flowchart showing a data transfer
5 processing procedure.

[0017]

First, before the transfer starts, "OFF_H" is written into item character strings of all items in a transfer destination (n1). Then, item symbols in a
10 transfer source are read out in order and it is determined whether or not the transfer destination contains the same item name (n2→n3). If the destination contains the same item name, the data for each item is transferred to an item character string
15 field for the same item corresponding to the item; if further items remain in the transfer source, the next item symbol is read out (n8→n9→n2). Otherwise, if an item name in the transfer source does not exist in the transfer destination but a similar item exists, for
20 example, a FAX number in the name card control that corresponds to a telephone number in the telephone book in the transfer from the name card control to the telephone book, the data storage state of a similar item field in the transfer destination is confirmed and
25 then the data is transferred (n4→n6). If the first character of an item character string field in the transfer destination is "OFF_H", which means that the

transfer destination contains no data, only data for each item is transferred. Otherwise, if the last character of an item character string field in the transfer destination is "00_H", which means that the transfer destination already stores data, first, a line feed code is transferred to the position to which "00_H" is written in, thereby transferring data for each item after starting a new line (n6→n7→n8). Still otherwise, if the transfer destination contains no item same as or resembling to an item in the transfer source, the item data is transferred to a remarks field in the transfer destination (n4→n5→n6...). A transfer method herein is same as a transfer method for the resembling item. If the transfer destination does not have the remarks field, the item data is not transferred but the flow proceeds to the next item.

[0018]

As described in the above, when the processing ends for all items in the transfer source, it is determined whether or not any item field to which no data has been inputted remains in the transfer destination (n10). The determination is based on whether or not any item character string exists to which "0FF_H" has been written in. If "0FF_H" exists, a character string such as "no corresponding data" is transferred to the item character string.

[0019]

[Effects of the Invention]

According to the present invention, an item name in the transfer source is associated with an item name in the transfer destination when applications transfer data for each item to each other, so that data for each item is transferred in an arranged state, thereby save the efforts of arrangement after the transfer.

[Brief Description of the Drawings]

[Figure 1]

10 A block diagram of an electronic notebook comprising a data transfer device.

[Figure 2]

A drawing showing the organization of a telephone book being one of applications.

15 [Figure 3]

A drawing showing the organization of name card control being one of the applications.

[Figure 4]

20 A drawing showing the organization of scheduling being one of the applications.

[Figure 5]

A drawing showing the organization of a note being one of the applications.

[Figure 6]

25 A drawing showing an example of transfer of data for each item from the name card control to the telephone book.

[Figure 7]

A drawing showing an example of transfer of data for each item from a telephone book 2 to the note.

[Figure 8]

- 5 A drawing showing an example of transfer of data for each item from the telephone book to the name card control.

[Figure 9]

- 10 A flowchart showing a transfer processing procedure for data for each item.

[Figure 1]

- 5 Keyboard
- 6 Display element
- 7 Display memory

5

[Figure 2]

- #1 Item name
- #2 Name
- #3 Pronunciation of name
- 10 #4 Telephone number
- #5 Zip code
- #6 Address
- #7 Remarks
- #8 Item symbol
- 15 #9 Item character string
- #10 (Character string)

[Figure 3]

- #1 Item name
- 20 #2 Full name
- #3 Pronunciation of full name
- #4 Telephone number
- #5 FAX number
- #6 Zip code
- 25 #7 Address
- #8 Company name
- #9 Pronunciation of company name

- #10 Department
- #11 Title
- #12 Remarks
- #13 Item symbol
- 5 #14 Item character string
- #15 (Character string)

[Figure 4]

- #1 Item name
- 10 #2 Starting time
- #3 Ending time
- #4 Content
- #5 Time of alarm
- #6 Item symbols
- 15 #7 Item character string
- #8 (Character string)

[Figure 5]

- #1 Item name
- 20 #2 Note content
- #3 Classification code
- #4 Classification name
- #5 Item symbol
- #6 Item character string
- 25 #7 (Character string)

[Figure 6]

- #1 Name card control (transfer source)
- #2 Full name
- #3 Pronunciation of full name
- #4 Telephone number
- 5 #5 FAX number
- #6 Zip code
- #7 Address
- #8 Company name
- #9 Department
- 10 #10 Title
- #11 Pronunciation of company name
- #12 Remarks
- #13 Telephone (transfer destination)
- #14 Name
- 15 #15 Pronunciation of name
- #16 Telephone number
- #17 Zip code
- #18 Address
- #19 Remarks

20

[Figure 7]

- #1 Telephone (transfer source)
- #2 Name
- #3 Pronunciation of name
- 25 #4 Telephone number
- #5 Zip code
- #6 Address

- #7 Remarks
- #8 Note (transfer destination)
- #9 Note content

5 [Figure 8]

- #1 Telephone book (transfer source)
- #2 Name
- #3 Pronunciation of name
- #4 Telephone number
- 10 #5 Zip code
- #6 Address
- #7 Remarks
- #8 Name card control (transfer destination)
- #9 Full name
- 15 #10 Pronunciation of full name
- #11 Telephone number
- #12 Zip code
- #13 Address
- #14 Remarks
- 20 #15 (Character string of FAX number)→FAX number
- #16 (Character string of company name)→company name
- #17 (Character string of pronunciation of company name)→pronunciation of company name
- #18 (Character string of department)→department
- 25 #19 (Character string of title)→title

[Figure 9]

- n1 Insert OFF_H to all items at transfer destination
- n2 Read out item symbols of transfer source
- n3 Same item exists
- n4 Similar item exists
- 5 n5 Transfer destination includes item of remarks (X)
- n6 Similar item contains data
- n7 Transfer line feed code to similar item
- n8 Transfer data (x) to same item or similar item
- n9 All items processed
- 10 n10 No-data-inputted item remains in transfer destination
- n11 To no item-character-string inputted item

5

管理のFAX番号に対する電話帳の電話番号の場合には、転送先の同類項目の欄のデータ記憶状態が確認されてからデータの転送が行われる(n4→n6)。転送先の項目文字列の欄の先頭の文字が“0FF”である場合は転送先にデータが無い状態であるから、そのまま項目別データの転送が行われる。しかし、転送先の項目文字列の欄の最後の文字が“00”である場合には転送先に既にデータが記憶されている状態であるから、まず“00”が書き込まれている位置に改行コードを転送し、これによって改行を行った後項目別データの転送を行う(n6→n7→n8)。さらに転送先に、転送元の項目と同一、同類のいずれの項目も無い場合には、転送先の備考欄にその項目データを転送する(n4→n5→n6・・・)。このときの転送方法は同類項の転送方法と同じである。なお転送先に備考欄がないときにはその項目データ転送せずに次の項目へと移る。

【0018】以上のようにして転送元の全ての項目について処理が終了すると、転送先に未入力項目欄がないかどうかを判別する(n10)。この判別は“0FF”が書き込まれている項目文字列が存在するかどうかで行われ、“0FF”が存在する場合にはその項目文字列に「対応データ無し」等の文字列が転送される。

【0019】

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【発明の効果】この発明によれば、アプリケーション間で項目別データの転送を行う場合に転送元の項目名と転送先の項目名との対応がとられるため整理された状態で項目別データが転送され、転送後の整理の手間を省くことができる。

【図面の簡単な説明】

【図1】データ転送装置を備える電子手帳のブロック図

【図2】アプリケーションの一つである電話帳の構成を示した図

【図3】アプリケーションの一つである名刺管理の構成を示した図

【図4】アプリケーションの一つであるスケジュールの構成を示した図

【図5】アプリケーションの一つであるメモの構成を示した図

【図6】名刺管理から電話帳への項目別データの転送例を示した図

【図7】電話帳2からメモへの項目別データの転送例を示した図

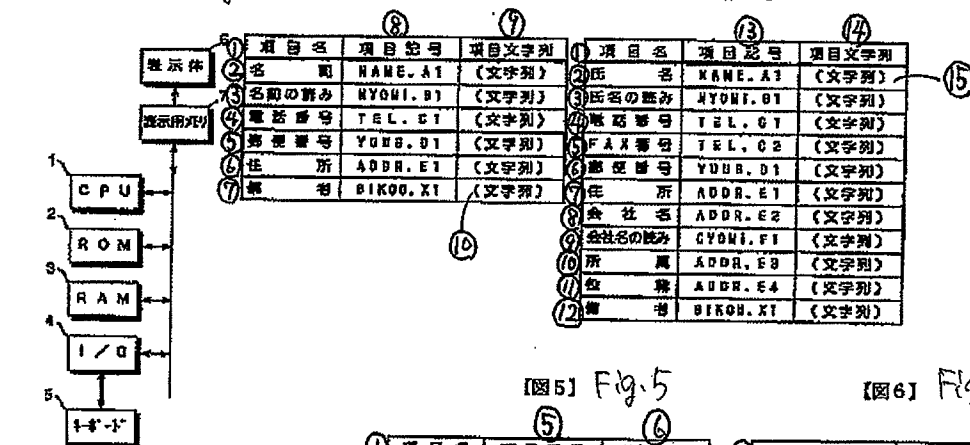
【図8】電話帳から名刺管理への項目別データの転送例を示した図

【図9】項目別データの転送処理手順を示したフローチャート

【図1】 Fig. 1

【図2】 Fig. 2

【図3】 Fig. 3

Fig. 4
【図4】

【図5】 Fig. 5

【図6】 Fig. 6

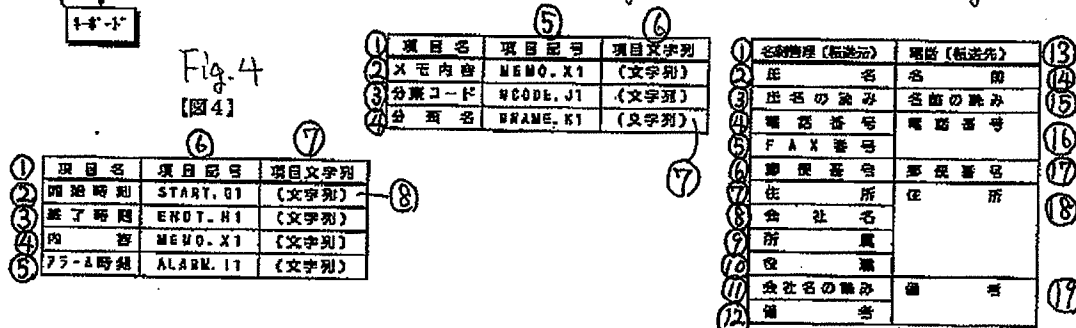
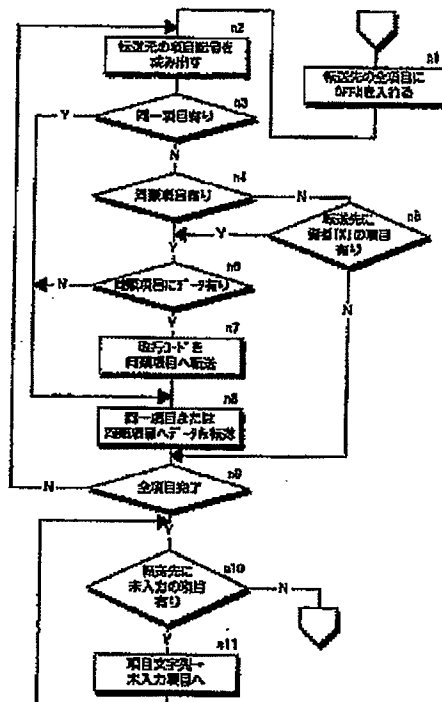


Fig. 7
【図7】

①	電話（転送元）	メモ（転送先）	⑧
②	名 前	メ モ 内 容	⑨
③	名 前 の 読み		
④	電 話 番 号		
⑤	送 信 番 号		
⑥	住 所		
⑦	備 考		

Fig. 8
【図8】

①	電話（転送元）	名前情報（転送先）	⑧
②	名 前	氏 名	⑨
③	名 前 の 読み	氏 名 の 読み	⑩
④	電 話 番 号	電 話 番 号	⑪
⑤	送 信 番 号	送 信 番 号	⑫
⑥	住 所	住 所	⑬
⑦	備 考	備 考	⑭
		(FAX番号の文字列)→FAX番号	⑮
		(会社名の文字列)→会社名	⑯
		(会社名の読み文字列)→会社名の読み	⑰
		(所属の文字列)→所属	⑱
		(役職の文字列)→役職	⑲

Fig. 9
【図9】

フロントページの続き

(72)発明者 森田 彰高
大阪市阿倍野区長池町22番22号 シャープ
株式会社内

(72)発明者 飯田 麻巳
大阪市阿倍野区長池町22番22号 シャープ
株式会社内

(72)発明者 田中 康晴
大阪市阿倍野区長池町22番22号 シャープ
株式会社内

(72)発明者 松田 榮睦
大阪市阿倍野区長池町22番22号 シャープ
株式会社内